J.R. Simplot Company's responses to agency comments received January 15, 2016 to the Hoopes Springs Treatability Study Addendum 04 – Pilot Test Plan: Nutrient Dosing, January 6, 2016. The pilot test plan has been updated to include the requested additional information and clarifications.

Below you will find the agency comments/questions indented in italics followed by a response to our interpretations or proposed changes below the question:

> ***Agencies' Comments on the Hoopes Springs Treatability Study Addendum 04 – Pilot Test Plan: Nutrient Dosing, dated January 6, 2016***

> ***Specific Comments:***

> ***SC-1:*** *Addendum 4 proposes nutrient dosing in an effort to alleviate excessive bio-film buildup in tanks. Simplot proposes adding nitrogen and phosphorus at a rate of 0.5 mg/l for nitrogen and 0.7 mg/l phosphorus, with the phosphorus further being reduced through the sand filter via ferric chloride precipitation to maintain a residual below 0.2 mg/l effluent. The effluent will be discharged to Hoopes Springs via a 24" pipeline, 600 feet into Hoopes Springs.*

> *What frequency of monitoring will be conducted to ensure the residual phosphorus is below 0.2 mg/l effluent?*

Response to SC-1

The Final Smoky Canyon Mine Pilot Study Work Plan and Sampling and Analysis Plan lists the Pilot Study Monitoring, Sampling and Analysis Schedule in Tables 3-3, 3-4, and 3-5. No modifications to the monitoring, sampling and analysis schedule are proposed via Addendum #4. Samples of the effluent are collected and analyzed for phosphorus concentration in the effluent routinely three times per week for operational control. During this restart of the Pilot Study, Simplot will increase the operational control sampling to once per day for the first week of startup to ensure the residual phosphorus is below 0.2 mg/l in the effluent.

Tables 3-3, 3-4 and 3-5 are reproduced here for convenience from the Final Work Plan, Sept 5, 2014:

Table 3-3 Pilot Study Monitoring, Sampling, and Analysis Schedule

System Status	Sampling Frequency	Sampling Locations	Analyses to be Performed	Lab Turnaround Time
Initial Steady State Flow After Start Up (Week 0)	One-time	Influent, effluent FBR effluent	Full analytical suite[a]	Routine
Operational (weeks 2-6)	Every two weeks	Influent, effluent	Full analytical suite[a]	Routine
Operational (weeks 2-6)	Every two weeks	Influent, effluent	Focused analyte suite[b]	48 hours[c]
Operational (after week 6)	Every two weeks	Influent, effluent	Focused analyte suite[b]	48 hours[c]
Operational (after week 6)	Quarterly	Influent, effluent	Full analytical suite[a]	Routine
Operational – Immediately Prior to Shut Down	One-time	Influent, effluent FBR effluent	Full analytical suite[a]	Routine

Notes:
a – Refer to Table 3- for list of analyses and methods.
b – Refer to Table 3-5 for list of analyses and methods.
c - Data will be available in 4-5 days after sample collection depending on shipping logistics.

Table 3-4 Laboratory Analyses, Methods and Reporting Limits – Full Analytical Suite

Laboratory Analyses	Method	Reporting Limits (RL)[1] (mg/L)
Alkalinity, as CaCO3	SM 2320B	1
Aluminum, total and dissolved	EPA 6010C	0.1
Ammonia as N	SM 4500 NH3 G	0.03
Antimony, total and dissolved	EPA 6020A	0.003
Arsenic, total and dissolved	EPA 6020A	0.003
Barium, total and dissolved	EPA 6020A	0.001
Beryllium, total and dissolved	EPA 6020A	0.0002
Biological Oxygen Demand	EPA 405.1	2
Boron, total and dissolved	EPA 6020A	0.05
Cadmium, total and dissolved	EPA 6020A	0.0002
Calcium, dissolved	EPA 6020A	0.05
Chemical Oxygen Demand	EPA 410.4	5
Chloride	EPA 300.0	0.02
Chromium, total and dissolved	EPA 6020A	0.0015
Cobalt, total and dissolved	EPA 6020A	0.001
Copper, total and dissolved	EPA 6020A	0.001
Fluoride	EPA 300.0	0.1
Hardness	SM 2340B (by calculation)	0.1
Iron, total and dissolved	EPA 6010C	0.06
Lead, total and dissolved	EPA 6020A	0.003
Magnesium, dissolved	EPA 6010C	0.10
Manganese, total and dissolved	EPA 6020A	0.001
Mercury, total and dissolved	EPA 7470A	0.0002
Molybdenum, total and dissolved	EPA 6020A	0.001

Laboratory Analyses	Method	Reporting Limits (RL)[1] (mg/L)
Nickel, total and dissolved	EPA 6020A	0.001
Nitrate + Nitrite, as N	EPA 353.2	0.05
Nitrite, as N	EPA 300.0	0.05
Total Phosphorus	SM 4500 PE	0.01
Potassium, dissolved	EPA 6010C	0.5
Selenium, total and dissolved	EPA 6020A	0.003
Selenate and Selenite, dissolved	IC-ICP-DRC-MS	0.003 and 0.003
Organic selenium species (dimethyl selenide and dimethyl selenide)	HPLC-ICP-DRC-MS	0.001 and 0.0015
Silver, total and dissolved	EPA 6020A	0.0001
Sodium, dissolved	EPA 6010C	0.5
Sulfate	EPA 300.0	1.0
Thallium, total and dissolved	EPA 6020A	0.001
TDS	SM 2540C	10
TOC	SM 5310B	1
TSS	SM 2540D	5.0
Uranium, total and dissolved	EPA 6020A	0.001
Vanadium, total and dissolved	EPA 6020A	0.0015
Zinc, total and dissolved	EPA 6020A	0.005

[1] Each laboratory's MDLs and RLs may change over time.

Table 3-5 Laboratory Analyses, Methods and Reporting Limits – Routine Samples

Laboratory Analyses	Method	Reporting Limits (RL)[1] (mg/L)
Routine Monitoring Parameters		
Selenium, dissolved	EPA 6020A	0.003
Selenium, total recoverable	EPA 6020A	0.003
Nitrate, as N	EPA 300.0	0.05

SC-2: *Simplot proposes to add micronutrients-metals, to adjust biochemical processes including molybdenum, cobalt, nickel, manganese, copper and zinc. There is little to no information on monitoring the effluent to assure these micronutrients/metals are not released in quantities and qualities to impact the ecosystem of Hoopes Springs. Please provide information on the sources of the micronutrients, monitoring frequency of the effluent and what would trigger adjustment of the pH.*

Response to SC-2

As stated in the response to Specific Comment 1, the Final Smoky Canyon Mine Pilot Study Work Plan and Sampling and Analysis Plan lists the Pilot Study Monitoring, Sampling and Analysis Schedule in Tables 3-3, 3-4, and 3-5. No modifications to the monitoring, sampling and analysis schedule are proposed via Addendum #4. All of the listed micronutrients are included in the Table 3-4 Laboratory Analyses, Methods and Reporting Limits – Full Analytical Suite.

See Tables 3-3, 3-4, and 3-5 above.

In the event that the micronutrient blend addition is required in the stepwise approach to micronutrient balance, the calculated maximum concentrations of micronutrient metals in the effluent are orders of magnitude lower than the water quality standard for the three metals which have an established acute or chronic standards. To assure these micronutrients/metals are not released in quantities and qualities to impact the ecosystem of Hoopes Spring, Simplot will collect samples and analyze on an accelerated 48-hour turnaround for molybdenum, cobalt, nickel, manganese, copper and zinc once per week for the first three weeks of micronutrient addition.

See Section 5.0 for descriptions of additional operational monitoring.

The source of the micronutrients is from Hydro Solutions located in Louisville, KY. The proposal for the micronutrients and the MSDS for the product are included in the appendices of Addendum #4.

The pH of the plant effluent is monitored continuously in the plant effluent. If the pH falls below 6.5, then caustic dosing will be “triggered” to raise pH to the circumneutral level.

SC-3: *Please discuss if nutrient values will be monitored after the FBR to insure there is adequate nutrients feeding the good bacteria in the aeration tank.*

Response to SC-3

During startup of the selenium pilot treatment system, operational monitoring is performed at many different locations in the treatment system. The operational monitoring is needed for process optimization and is anticipated to continue for monitoring nutrient levels in the secondary treatment system.

See Section 5.0 for descriptions of additional operational monitoring.

SC-4: *Following up on the Agencies' comments to Simplot on December 10, please revise Table 2 to add a column that contains the relevant water quality criteria so the reader can compare anticipated concentrations of micronutrient constituents to relevant water quality criteria.*

Response to SC-4

The updated Table 2 which includes the relevant water quality criteria is shown below and the report has been updated with this information.

Parameter	Raw Influent mg/L	Micronutrient Concentration mg/L	Micronutrient Dose gpd	Adjusted Influent ** mg/L	Biological Effluent mg/L	Final Effluent mg/L	Acute**** Water Quality Standard mg/L	Chronic**** Water Quality Standard mg/L
NH3-N	0.026	*	*	1	0.5	0.5		
Phos	0.02	*	*	1	0.7	0.20***		
Mo	0.0013	3,600	3	0.032	0.002	0.0017		
Co	0.0001	6,410	3	0.053	0.0009	0.0002		
Ni	0.0003	6,800	3	0.056	0.0005	0.0004	0.470	0.052
Mn	0.0013	4,270	3	0.037	0.002	0.001		
Cu	0.0004	4,360	3	0.031	0.0004	0.0001	0.017	0.011
Zn	0.002	4,100	3	0.036	0.002	0.0015	0.120	0.120

**Based on 250 gpm (360,000 gpd) flow rate

*** Phosphorus concentration after precipitation with ferric chloride

****IDAPA 58.01.02 Section 210 NUMERIC CRITERIA FOR TOXIC SUBSTANCES FOR WATERS DESIGNATED FOR AQUATIC LIFE, RECREATION, OR DOMESTIC WATER SUPPLY USE.

SC-5: *Please discuss what happened to the NaOH that was added at the end under the existing design but no longer appears in the process diagram on page 6.*

Response to SC-5

The NaOH system remains in place within the treatment system and is online for pH adjustment if necessary. Due to the buffering capacity of the source water and the low ferric chloride dose rates, the effluent pH has remained within discharge parameters without the use of NaOH. The process diagram on page 6 has been updated to include the NaOH feed system and is shown below.